

## CHECKLIST OF THE SPECIES IN THE SUBFAMILY STENOGRASTRINAE (HYMENOPTERA: VESPIDAE)

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**Abstract.**—A checklist of the species in the subfamily Stenogastrinae is presented, including synonyms, nomenclatural changes, and distributional summaries. Forty-five species in seven genera are treated as valid, with an additional three subspecies. Excluding emendations, misspellings and *nomina nuda*, a further 16 names are treated as available synonyms, but eight of these names are listed only as questionable synonyms. A new combination is *Parischnogaster aurifrons* (Smith). Thirty new locality records are given.

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The taxonomy of the hover wasps, Stenogastrinae, has not been well studied, compared to the other two social wasp subfamilies (Vespinae and Polistinae). Well corroborated taxonomic works would of course contribute greatly to the study of the biology of these wasps, which exhibit considerable divergence in social organization and nesting behavior (reviewed in Turillazzi, 1991). A checklist, which provides basic taxonomic information, such as the currently available species names, synonymy and type depositories, is helpful in perusing revisionary taxonomic works and catalogs.

The checklist presented here gives such information for the Stenogastrinae. It covers all the nomenclatural changes and provides also a summary of distributional data. The last attempt to list all of the Stenogastrinae was by von Schulthess (1927). Although useful, von Schulthess did overlook a few available names when compiling his list, and 26 taxa have since been described. This includes six genera. Five of these genera were described by the late J. van der Vecht (1969, 1972, 1977), who also described most of the species level taxa (1972, 1975, 1977). Van der Vecht was preparing taxonomic revisions of all the Stenogastrinae, but died before he published the revisions of *Eustenogaster*, *Liostenogaster* and *Parischnogaster*. The revisions van der Vecht began are now being carried on by C. K. Starr and S. Turillazzi, and a few descriptions have appeared (Turillazzi, 1988; Turillazzi and Carfi, 1996). In the meantime, over the course of his work van der Vecht distributed specimens labelled with no fewer than 24 manuscript names to various collections. One consequence of this was predictable: two of these names have been published as *nomina nuda* (Hansell, 1987; Carpenter, 1988; see below). Van der Vecht's unpublished notes also indicated a few synonymies that have still not appeared. These are listed below only as questionable synonyms, because we ourselves have not yet studied all of the relevant types. But two of these synonymies, if correct, entail the replacement of names currently in use (namely *Parischnogaster alternata* and *P. timida*). We are not taking the step of replacing these names, but are listing the putative senior

synonyms, in order to draw the attention of other scientists to the potential synonymy, and so encourage study of the possibility. Moreover, potential synonyms have been overlooked in regional works (Das and Gupta, 1984, 1989; Reyes, 1988), which are thus incomplete.

Another peculiarity of this piecemeal publication of the taxonomy for the subfamily is that most of the species were transferred from the two genera recognized by von Schulthess (1927) to the modern genera in publications devoted to other subjects. This includes the cladistic analysis by Carpenter (1982, 1988), and the book on the ethology of Hymenoptera written by Iwata. The combinations appeared in Iwata's book apparently because the wasps observed by Iwata were identified by van der Vecht. Although Iwata used these modern combinations in his original book written in Japanese (1971), the English translation published in 1976 is cited in the checklist because of the easier availability of the latter book, and because no nomenclatural changes were made for the species Iwata treated between 1971 and 1976 (except Krombein, 1976).

The arrangement of the checklist is alphabetical. The status given each taxon generally follows the most recent author to treat that taxon. Each name is followed by the original citation, followed by synonymies and generic changes, which are listed chronologically. The unpublished synonyms in van der Vecht's notes are listed with question marks preceding. Misspellings are indicated by exclamation points in brackets. Each publication is cited in abbreviated form. Where two dates are listed, the first is the true date of publication, so far as can be determined, with the date following in parentheses being the date printed on the publication. The original locality is quoted, and the type depository is then listed in parentheses, as the city containing the collection. Distributional data are summarized by country in the final paragraph for an taxon treated as valid. An asterisk denotes a new locality record.

Phylogenetic relationships among the genera are: *Liostenogaster* + ((*Eustenogaster* + *Stenogaster*) + (*Anischnogaster* + (*Metischnogaster* + *Parischnogaster*))) (Carpenter, 1988). Carpenter (1988) synonymized one of van der Vecht's (1977) genera, sinking *Holischnogaster* into *Parischnogaster*. The sole species included in *Holischnogaster*, *gracilipes*, is evidently the sister-group to *Parischnogaster*, but possesses no described autapomorphies.

SUBFAMILY STENOGASTRINAE BEQUAERT, 1918  
(ISCHNOGASTERINAE ASHMEAD, 1902)

Genus *Anischnogaster* van der Vecht

*Anischnogaster* van der Vecht, 1972, Zool. Meded. 47:240, 241, genus.

Type species: *Ischnogaster iridipennis* Smith, 1859, by original designation.

*dubia* van der Vecht

*Anischnogaster dubia* van der Vecht, 1972, Zool. Meded. 47:242 (key), 247, figs. 24-36, female, male—"N.W. New Guinea . . . Araucaria Camp, 800 m" (holotype female Leiden); also from other localities in Irian Jaya.

Distribution: Indonesia: Irian Jaya.

*iridipennis* (Smith)

*Ischnogaster iridipennis* Smith, 1859, J. Proc. Linn. Soc., Zool. 3:166, male—"Aru" (lectotype Oxford).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:405 (syn.: *Ischnogaster malayaensis* Cameron).—van der Vecht, 1972, Zool. Meded. 47:242 (designation of lectotype).

*Ischnogaster malayaensis* Cameron, 1906, Tijdschr. Ent. 49:231, female—"Etna Bay" (Amsterdam).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:405 (syn. of *Ischnogaster iridipennis* Smith).

*Ischnogaster coriaceus* du Buysson, 1907, Notes Leyden Mus. 29:79, male—"Nouvelle Guinée" (Leiden).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).—van der Vecht, 1972, Zool. Meded. 47:243 (syn. of *Anischnogaster iridipennis* (Smith)).

*Stenogaster iridipennis*; von Schulthess, 1927, Suppl. Ent. 16:86, 87 (? or *Parischnogaster*).

*Parischnogaster* ? *coriaceus*; von Schulthess, 1927, Suppl. Ent. 16:87.

*Parischnogaster* ? *malayaensis*; von Schulthess, 1927, Suppl. Ent. 16:87.

*Anischnogaster iridipennis*; van der Vecht, 1972, Zool. Meded. 47:241, 242, figs. 1–13, 57, 58 (syns.: *Ischnogaster malayaensis* Cameron, *Ischnogaster coriaceus* du Buysson).

Distribution: Indonesia: Aru, Misool, Waigeo, Irian Jaya; Papua New Guinea.

*laticeps* van der Vecht

*Anischnogaster laticeps* van der Vecht, 1972, Zool. Meded. 47:242 (key), 249, figs. 37–46, 59, female, male—"North West New Guinea, Araucaria Camp, 800 m" (holotype female Leiden); also from other localities in New Guinea.

Distribution: Indonesia: Irian Jaya; Papua New Guinea.

*loriae* *loriae* (du Buysson)

*Ischnogaster loriae* du Buysson, 1909, Ann. Mus. Civ. Stor. Nat. Genova 44:313, male—"Nouvelle Guinée S. E. Moroka, 1,300 m" (Genova).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):254 (in subgenus *Ischnogaster*).

*Parischnogaster* ? *loriae*; von Schulthess, 1927, Suppl. Ent. 16:87.

*Anischnogaster loriae loriae*; van der Vecht, 1972, Zool. Meded. 47:242, 251, 253, figs. 47–56, pl. 1.

Distribution: Indonesia: Irian Jaya; Papua New Guinea.

*loriae maculata* van der Vecht

*Anischnogaster loriae maculata* van der Vecht, 1972, Zool. Meded. 47:253, female, male—"N. E. New Guinea . . . Mt. Kaindi, Nami Ck., 1700 m" (holotype male Honolulu); also from other localities in Irian Jaya.

Distribution: Indonesia: Irian Jaya.

*spilaspis* (Cameron)

*Ischnogaster spilaspis* Cameron, 1913, Bijdr. Dierk. 19:78, male—"Waigeo" (Amsterdam).

*Anischnogaster spilaspis*; van der Vecht, 1972, Zool. Meded. 47:242 (key), 246, figs. 14-23 ("The original description . . . no doubt . . . based on a male" "a female from 'Waigeoe, 31 Dec.', labelled "*Ischnogaster spilaspis* Cam. type by Cameron is in Mus. Amsterdam", but "It appears uncertain whether the true type [male] is still in existence").

Distribution: Indonesia: Waigeo, Irian Jaya.

#### Genus *Eustenogaster* van der Vecht

*Eustenogaster* van der Vecht, 1969, in Yoshikawa *et al.*, Nature and Life in S. E. Asia 6:165, genus.

Type species: *Ischnogaster micans* de Saussure, 1852, by original designation.

*Paravespa* Bell, 1936, J. Bombay Nat. Hist. Soc. 38: Fig. 1, 803, 806, genus (2 species).

Type species: *Paravespa eva* Bell, 1936 [= *Stenogaster eximiooides* Dover and Rao, 1922], by subsequent designation of van der Vecht and Carpenter, 1990, Zool. Verh., Leiden 260:44. Junior homonym of *Paravespa* Radoszkowski, 1886 (Vespidae: Eumeninae).

#### *agilis* (Smith)

*Ischnogaster agilis* Smith, 1860, J. Proc. Linn. Soc., Zool. 5, Suppl.: 89, male—"Makassar" (Oxford).

*Stenogaster agilis*; von Schulthess, 1927, Suppl. Ent. 16:85.

*Eustenogaster agilis*; Carpenter, 1988, J. New York Ent. Soc. 96:174.

Distribution: Indonesia: Sulawesi.

#### *calyptodoma* (Sakagami and Yoshikawa)

*Stenogaster calyptodoma* Sakagami and Yoshikawa, 1968, Annot. Zool. Japon. 41(2):77, figs. 1-2, 4, 6, female—"Kampong Astana near Kuching, Sarawak, Malaysian Borneo" (Hokkaido University, Sapporo).

*Eustenogaster calyptodoma*; Yoshikawa *et al.*, 1969, in Nature and Life in S. E. Asia 6:157.

Distribution: Malaysia: Peninsular Malaysia, Sarawak; Indonesia: Sumatra.

#### *eximia eximia* (Bingham)

*Ischnogaster eximius* Bingham, 1890, J. Bombay Nat. Hist. Soc. 5:244, male—"Ceylon" (London).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):256 (in subgenus *Ischnogaster*).

*Ischnogaster eximia*; von Dalla Torre, 1904, Genera Insect. 19:83 (cat.).

*Stenogaster eximia*; Dover and Rao, 1922, J. Asiatic Soc. Bengal (N. S.) 18: 241.—Dover, 1925 (1924), J. Asiatic Soc. Bengal (N. S.) 20:301 (syn.: *Stenogaster eximiooides* Dover and Rao); 1931, J. Fed. Malay St. Mus. 16:256 (syn.: *Ischnogaster ornatifrons* Cameron).

*Stenogaster eximius*; von Schulthess, 1927, Suppl. Ent. 16:85.

*Eustenogaster eximia*; Iwata, 1976, Evol. Instinct: 275 (ethology).—Krombein, 1976, Loria 13(6):303.

*Eustenogaster eximia eximia*; Das and Gupta, 1984 (1983), Or. Ins. 17:401 (cat.).  
 Distribution: Sri Lanka; Thailand; Malaysia: Peninsular Malaysia.

*eximia eximiooides* (Dover and Rao)

*Stenogaster eximiooides* Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.) 18:242, male—"Nadgani, Nilgiri Hills. 2,500 ft." (lectotype Calcutta).—Dover, 1925 (1924), J. Asiat. Soc. Bengal (N. S.) 20:301 (syn. of *Stenogaster eximia* (Bingham)).—Das and Gupta, 1989, Or. Ins. Monogr. 11:28 (designation of lectotype).

*Paravespa eva* Bell, 1936, J. Bombay Nat. Hist. Soc. 38:803, fig. 1, female, male—"N. Kanara District, Bombay" (London).—Das and Gupta, 1984 (1983), Or. Ins. 17:402 (syn. of *Eustenogaster eximia eximiooides*).

*Eustenogaster eximiooides*; Iwata, 1976, Evol. Instinct: 275 (ethology).

*Eustenogaster eximia eximiooides*; Das and Gupta, 1984 (1983), Or. Ins. 17:402 (syn.: *Paravespa eva* Bell; cat.).

"*Ischnogaster eximia eximiooides*"; van der Vecht and Carpenter, 1990, Zool. Verh., Leiden 260:44 (designation as type species of *Paravespa* Bell).

Distribution: India: Kerala, Tamil Nadu.

*fraterna* (Bingham)

*Ischnogaster fraterna* Bingham, 1897, Fauna Brit. India, Hym. 1:377 (key), 378, female, male—"Tenasserim" (London).

*Stenogaster fraterna*; Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.) 18:240.—Dover, 1925 (1924), J. Asiat. Soc. Bengal (N. S.) 20:301 (syns.: *Ischnogaster scitula* Bingham, *Stenogaster scitula* var. *assamensis* Dover and Rao).

*Eustenogaster fraterna*; Iwata, 1976, Evol. Instinct: 275 (ethology).

Distribution: India: Assam, Sikkim; Myanmar; Malaysia: Peninsular Malaysia.

*fulvipennis* (Cameron)

*Ischnogaster fulvipennis* Cameron, 1902, J. Straits Branch R. Asiat. Soc. 37:106, female, male—"Mt. Penrissen, Sarawak" (London).—Dover, 1929, Bull. Raffles Mus. 2:45 (syn. of *Stenogaster micans* (de Saussure)).

? *Ischnogaster fuscipes* Cameron, 1903, J. Straits Branch R. Asiat. Soc. 39:171, sex not stated—"Klackang" (London).

*Stenogaster fulvipennis*; von Schulthess, 1927, Suppl. Ent. 16:86.

*Eustenogaster fulvipennis*; Carpenter, 1988, J. New York Ent. Soc. 96:175.

Distribution: Malaysia: Sarawak.

*hauxwellii* (Bingham)

*Ischnogaster rufo-maculata* Bingham, 1894, J. Bombay Nat. Hist. Soc. 8:385, female—"Tenasserim (Salween Valley, Tavoy)" (London); 1897, Fauna Brit. India, Hym. 1:377, 379 (*rufomaculata*).—Das and Gupta, 1984 (1983), Or. Ins. 17:402 (syn. of *Eustenogaster hauxwellii* (Bingham), acting as first reviser).

*Ischnogaster hauxwellii* Bingham, 1894, J. Bombay Nat. Hist. Soc. 8(3):386, pl. 1 fig. 4, female, male—"Tenasserim (Ataran and Ye Valleys)" (London).

*Ischnogaster hauxwelli* [!]; von Dalla Torre, 1904, Gen. Ins. 19:84 (syn. of *Ischnogaster micans* de Saussure).

? *Stenogaster bicarinata* Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.) 18:242, male—"Ten miles south of Kuching, Sarawak, Borneo" (Calcutta).

*Stenogaster rufomaculata*; Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.) 18:241.

*Stenogaster micans* var. *hauxwelli* [!]; von Schulthess, 1927, Suppl. Ent. 16:85.

*Stenogaster rufomaculatus*; von Schulthess, 1927, Suppl. Ent. 16:86 (cat.).

*Stenogaster nigromaculata* [!]; Dover, 1931, J. Fed. Malay. St. Mus. 16:256.

*Eustenogaster hauxwellii*; Iwata, 1976, Evol. Instinct: 274.—Das and Gupta, 1984 (1983), Or. Ins. 17:402 (syn.: *Ischnogaster rufomaculata* Bingham, acting as first reviser; cat.; distr.).

Distribution: India: Sikkim; Myanmar; Thailand; Malaysia: Sarawak; Singapore; Indonesia: Java, Sumatra\*, Bangka\*, Kalimantan\*; Philippines: Mindanao.

#### *luzonensis* (Rohwer)

*Stenogaster micans* var. *luzonensis* Rohwer, 1919, Bull. Hawaii. Sugar Pltrs. Assoc. Exp. Stat. (Ent. Ser.) 14(1):3a, 16, male, female—"Mt. Makiling, Luzon, P. I." (holotype female Washington).

*Stenogaster micans* var. *luzonicus* [!]; von Schulthess, 1927, Suppl. Ent. 16:85.

*Eustenogaster luzonensis*; Carpenter, 1988, J. New York Ent. Soc. 96:175.

Distribution: Philippines: Luzon.

#### *micans* (de Saussure)

*Ischnogaster micans* de Saussure, 1852, Ann. Soc. Ent. France (2)10:24, female—"Java" (Leiden).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):254 (in subgenus *Ischnogaster*).

? *Ischnogaster ornatifrons* Cameron, 1902, J. Straits Branch R. Asiat. Soc. 37: 105, female—"Santubong, Kuching, Sarawak" (London).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:463 (in subgenus *Parischnogaster*).

*Stenogaster micans*; von Schulthess, 1927, Suppl. Ent. 16:81, 85.—Dover, 1929, Bull. Raffles Mus. 2:45 (syn.: *Ischnogaster fulvipennis* Cameron).

*Stenogaster ornatifrons*; von Schulthess, 1927, Suppl. Ent. 16:86.

*Eustenogaster micans*; van der Vecht, 1969, in Yoshikawa *et al.*, Nature and Life in S. E. Asia 6:165.

*Holischnogaster micans*; Lee, 1982, Hornets Agric. Regions China: 133 [probable error or misidentification].

Distribution: Myanmar; Thailand; Malaysia: Peninsular Malaysia\*, Sarawak; Singapore; Indonesia: Java, Sumatra\*, Bangka\*.

#### *palavanica* Reyes

*Eustenogaster palavanica* Reyes, 1988, Philipp. Ent. 7(4):387, 392 (key), figs. 25–29, female, male—"Irawan River, 2000 ft, Mt. Beaufort, Palawan" (holotype male Honolulu); also from other localities in Palawan.

Distribution: Philippines: Palawan.

*scitula* (Bingham)

*Ischnogaster scitula* Bingham, 1897, Fauna Brit. India, Hym. 1:377 (key), 379, female—"Rangit Valley, Sikhim; Margherita, Assam" (London).—Dover, 1925 (1924), J. Asiatic Soc. Bengal (N. S.) 20:301 (syn. of *Stenogaster fraterna* (Bingham)).

*Stenogaster scitula*; Dover and Rao, 1922, J. Proc. Asiatic Soc. Bengal (N. S.) 18:240.

*Stenogaster scitula* var. *assamensis* Dover and Rao, 1922, J. Proc. Asiatic Soc. Bengal (N. S.) 18:240, male—"Margherita, Assam" (Calcutta).—Dover, 1925 (1924), J. Asiatic Soc. Bengal (N. S.) 20:301 (syn. of *Stenogaster scitula* (Bingham)).

*Stenogaster seitula* [!]; Lee, 1982, Hornets Agric. Regions China: 130.

*Eustenogaster scitula*; Das and Gupta, 1984 (1983), Or. Ins. 17:402 (syn.: *Stenogaster scitula* var. *assamensis* Dover and Rao).

Distribution: India: Assam, Meghalaya, Sikkim; Myanmar; Malaysia.

Genus *Liostenogaster* van der Vecht

*Liostenogaster* van der Vecht, 1969, in Yoshikawa *et al.*, Nature and Life in S. E. Asia 6: 165, genus.

Type species: *Ischnogaster nitidipennis* de Saussure, 1853, by original designation.

*flaviplagiata* (Cameron)

*Ischnogaster flaviplagiatus* Cameron, 1902, J. Straits Branch R. Asiatic Soc. 37: 104, female—"Kuching, Sarawak" (London).

*Parischnogaster flaviplagiatus* [!]; von Schulthess, 1927, Suppl. Ent. 16:87.

*Stenogaster flaviplagiata* [!]; Dover, 1931, J. Fed. Malay. St. Mus. 16:256 (syn. of *Stenogaster nitidipennis* (de Saussure)).

*Liostenogaster flaviplagiata*; Turillazzi and Carfi, 1996, Trop. Zool. 9(1):19.

Distribution: Thailand; Malaysia: Sarawak; Indonesia: Sumatra.

*flavolineata* (Cameron)

*Ischnogaster flavolineata* Cameron, 1902, J. Straits Branch R. Asiatic Soc. 37:108, female—"Lingga, Sarawak" (London).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:463 (in subgenus *Parischnogaster*).

*Ischnogaster butteli* von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255, 257, Figs. F, J–L, male, female (in subgenus *Parischnogaster*)—"Malacca, Taiping Hills, . . . Maxwell's Hill, Taiping" (Berlin).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:463 (in subgenus *Parischnogaster*; "This species is distinct from *I. flavolineata* Cam.").—Dover, 1931, J. Fed. Malay. St. Mus. 16:256 (syn. of *Stenogaster flavolineata* (Cameron)).

*Parischnogaster butteli*; von Schulthess, 1927, Suppl. Ent. 16:86.

*Parischnogaster flavolineatus*; von Schulthess, 1927, Suppl. Ent. 16:87 (distr.).

*Stenogaster flavolineata*; Dover, 1929, Bull. Raffles Mus. 2:45.

*Liostenogaster flavolineata*; Carpenter, 1988, J. New York Ent. Soc. 96:174.

Distribution: Malaysia: Peninsular Malaysia, Sarawak; Singapore\*; Indonesia: Sumatra.

*lunata* Carpenter

*Liostenogaster lunata* Carpenter, 1982, Syst. Ent. 7:34. *Nomen nudum.*

*nitidipennis* (de Saussure)

*Ischnogaster nitidipennis* de Saussure, 1853, Ét. Fam. Vespa. 2:10, male—"Selon l'étiquette, Cayenne!?? mais il est évident à mes yeux que cet insecte ne peut venir que de Java, de la Nouvelle-Guinée, ou de la Polynésie" (Paris).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).

*Parischnogaster nitidipennis*; von Schulthess, 1927, Suppl. Ent. 16:88.

*Stenogaster nitidipennis*; Dover, 1929, Bull. Raffles Mus. 2:46; 1931, J. Fed. Malay. St. Mus. 16:256 (syn.: *Stenogaster flavoplagiata* [!]) (Cameron)).

*Liostenogaster nitidipennis*; Iwata, 1976, Evol. Instinct: 275 (ethology).

Distribution: Myanmar; Thailand; Malaysia: Peninsular Malaysia, Sabah\*; Singapore; Indonesia: Java, Kalimantan, Sumatra\*; Philippines: Luzon, Palawan.

*pardii* Turillazzi and Carfi

*Liostenogaster pardii* Turillazzi and Carfi, 1996, Trop. Zool. 9(1):19, 20, figs. 1-22, male, female, nest—"Malaysian Peninsula. Genting Sempah, Genting Tea Estate (elev. 610 m), Pahang State" (holotype male Firenze); also from Selangor and Sarawak.

Distribution: Malaysia: Peninsular Malaysia, Sarawak.

*picta* (Smith)

*Ischnogaster pictus* Smith, 1860, J. Proc. Linn. Soc., Zool. 5, Suppl.: 89, female—"Makassar" (Oxford).

*Ischnogaster picta*; von Dalla Torre, 1894, Cat. Hym. 9:113 (cat.).

*Stenogaster pictus*; von Schulthess, 1927, Suppl. Ent. 16:86.

*Liostenogaster picta*; Turillazzi and Carfi, 1996, Trop. Zool. 9(1):19.

Distribution: Indonesia: Sulawesi.

*varipicta* (Rohwer)

*Stenogaster varipictus* Rohwer, 1919, Bull. Hawaii. Sugar Pltrs. Assoc. Exp. Stat. (Ent. Ser.) 14(1):3a, 15, female—"Los Baños, Luzon, P. I." (Washington).

*Parischnogaster ? varipictus*; von Schulthess, 1927, Suppl. Ent. 16:88.

*Liostenogaster varipicta*; Carpenter, 1981 (1982), Syst. Ent. 7:34.

*Liostenogaster variapicta* [!]; Reyes, 1988, Philipp. Ent. 7(4):396.

Distribution: Thailand\*; Malaysia: Peninsular Malaysia, Sabah\*; Singapore; Indonesia: Sumatra\*, Kalimantan; Philippines: Palawan, Visayas, Mindanao, Luzon.

*vechti* Turillazzi

*Liostenogaster arcuata* Hansell, 1987, Oxford Surv. Evol. Biol. 4:167. *Nomen nudum.*

*Liostenogaster vechti* Turillazzi, 1988, Tropic. Zool. 1:193, 194, figs. 1–20, female, male—“Bukit Fraser (Fraser Hill), Jeriau Waterfall (910 m a.s.l.), Pahang State” (holotype male Firenze); also from other localities in Malaysia.

Distribution: Malaysia: Peninsular Malaysia; Indonesia: Sumatra.

Genus *Metischnogaster* van der Vecht

*Metischnogaster* van der Vecht, 1977, Tijdschr. Ent. 120:59, 60, genus.

Type species: *Ischnogaster cilipennis* Smith, 1857, by original designation.

*cilipennis* (Smith)

*Ischnogaster cilipennis* Smith, 1857, Cat. Hym. Brit. Mus., Hym. 5:92, male—“Malacca (Mount Ophir)” (lectotype London).—du Buysson, 1909, Ann. Mus. Civ. Stor. Nat. Genova 44:312 (syn.: *Ischnogaster drewseni* (de Saussure)).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).—van der Vecht, 1977, Tijdschr. Ent. 120:64 (designation of lectotype).

*Parischnogaster cilipennis*; von Schulthess, 1927, Suppl. Ent. 16:87 (syn.: *Ischnogaster drewseni* de Saussure).

*Stenogaster cilipennis*; Dover, 1931, J. Fed. Malay St. Mus. 16:256 (distr.).

*Metischnogaster cilipennis*; van der Vecht, 1977, Tijdschr. Ent. 120:63, 64.

Distribution: Malaysia: Peninsular Malaysia, Sarawak; Indonesia: Sumatra, Kalimantan.

*drewseni* (de Saussure)

*Ischnogaster drewseni* de Saussure, 1857, Ann. Soc. Ent. France (3)5:315, male—“Poulo-Pinang, île de l’Archipel Indien” (Genève).—du Buysson, 1909, Ann. Mus. Civ. Stor. Nat. Genova 44:312 (syn. of *Ischnogaster cilipennis* Smith).—von Schulthess, 1927, Suppl. Ent. 16:87 (syn. of *Parischnogaster cilipennis* (Smith)).

*Ischnogaster drewsenii* [!]; von Dalla Torre, 1894, Cat. Hym. 9:113 (cat.).

*Stenogaster drewseni*; Pagden, 1962, Malay. Nat. J. 16:95 (ethology).

*Metischnogaster drewseni*; van der Vecht, 1977, Tijdschr. Ent. 120:64 (key), 69.

Distribution: Malaysia: Peninsular Malaysia, Sarawak; Singapore; Indonesia: Sumatra, Belitung, Java, Kalimantan; Philippines: Palawan.

Genus *Parischnogaster* von Schulthess

*Parischnogaster* von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37: 255, subgenus of *Ischnogaster* Guérin.

Type species: *Ischnogaster mellyi* de Saussure, 1852, by original designation.

*Holischnogaster* van der Vecht, 1977, Tijdschr. Ent. 120:60, 70, genus.

Type species: *Holischnogaster gracilipes* van der Vecht, 1977, by original designation and monotypy.

*alternata* Sakagami

? *Stenogaster sarawakensis* Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.) 18:240, female—“10 miles south of Kuching, Sarawak, Borneo” (Calcutta).

*Parischnogaster alternata* Sakagami, 1969, in Yoshikawa *et al.*, Nature and Life in S. E. Asia 6:155, female, male—"Fraser's Hill, Malaya" (holotype male Hokkaido University, Sapporo); also from another locality in Peninsular Malaysia.

*Parischnogaster alternate* [!]; Kojima, 1990, Japan. J. Ent. 58(3):517.

Distribution: Thailand\*; Malaysia: Peninsular Malaysia, Sabah, Sarawak; Singapore\*; Indonesia\*: Sumatra.

*aurifrons* (Smith), NEW COMBINATION

*Ischnogaster aurifrons* Smith, 1862, J. Proc. Linn. Soc., Zool. 6:58, female—"Celebes (Tondano)" (Oxford).

*Stenogaster aurifrons*; von Schulthess, 1927, Suppl. Ent. 16:85, 86 (? or *Parischnogaster*).

Distribution: Indonesia: Sulawesi.

*depressigaster* (Rohwer)

*Stenogaster depressigaster* Rohwer, 1919, Bull. Hawaii. Sugar Pltrs. Assoc. Exp. Stat. (Ent. Ser.) 14(1):3a, 16, male—"Los Baños, Luzon, P. I." (Washington).

*Parischnogaster* ? *äpressigaster* [!]; von Schulthess, 1927, Suppl. Ent. 16:87.

*Parischnogaster depressigaster*; Iwata, 1967, Nature Life S. E. Asia 5:260 (ethology).

Distribution: Philippines: Luzon.

*gracilipes* (van der Vecht)

*Holischnogaster gracilipes* van der Vecht, 1977, Tijdschr. Ent. 120:73, figs. 38–49, female, male—"Borneo: Sabah . . . Mt. Kinabalu, 5,000 ft" (Venezia); also from other localities in Borneo and Sumatra.

*Parischnogaster gracilipes*; Carpenter, 1988, J. New York Ent. Soc. 96:175.

Distribution: Malaysia: Sabah, Sarawak; Indonesia: Sumatra.

*jacobsoni* (du Buysson)

*Ischnogaster jacobsoni* du Buysson, 1913, Bull. Mus. Hist. Nat. Paris 7:436, male—"Java, Noesa Kambangan" (Paris).

*Parischnogaster jacobsoni*; von Schulthess, 1927, Suppl. Ent. 16:81, 87.

Distribution: Malaysia: Peninsular Malaysia, Sabah; Indonesia: Sumatra, Java, Bangka\*, Kalimantan\*.

*mellyi* (de Saussure)

*Ischnogaster mellyi* de Saussure, 1852, Ann. Soc. Ent. France (2)10:25, pl. 2, fig. 1, male—"Java" (male Genève).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):256 (in subgenus *Parischnogaster*).

*Ischnogaster nigrifrons* Smith, 1857, J. Proc. Linn. Soc., Zool.: 113, female—"Borneo (Sarawak)" (Oxford).—Das and Gupta, 1984 (1983), Or. Ins. 17:401 (syn. of *Parischnogaster mellyi* (de Saussure)).

*Stenogaster nigrifrons*; Dover and Rao, 1922, J. Proc. Asiat. Soc. Bengal (N. S.)

18:241.—Dover, 1929, Bull. Raffles Mus. 2:45; 1931, J. Fed. Malay St. Mus. 16:255 (syns.: *Ischnogaster nigricans* Cameron, *Ischnogaster serrei* du Buysson).

*Parischnogaster mellyi*; von Schulthess, 1927, Suppl. Ent. 16:82, 87.—Das and Gupta, 1984 (1983), Or. Ins. 17:401 (syn.: *Ischnogaster nigrifrons* Smith).

*Parischnogaster nigrifrons*; von Schulthess, 1927, Suppl. Ent. 16:83, 87.

*Stenogaster mellyi*; Pagden, 1962, Malay. Nat. J. 16:95.

Distribution: India: Assam, Meghalaya, Sikkim; Myanmar; Vietnam; Thailand; Malaysia: Peninsular Malaysia, Sabah; Singapore; Indonesia: Sumatra, Java, Kalimantan, Bangka\*; Philippines: Mindanao.

#### *nigricans nigricans* (Cameron)

*Ischnogaster nigricans* Cameron, 1902, J. Straits Branch R. Asiat. Soc. 37:105, female—"Kuching, Sarawak" (London).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:463 (in subgenus *Parischnogaster*).—Dover, 1931, J. Fed. Malay St. Mus. 16:255 (syn. of *Stenogaster nigrifrons* (Smith)).

*Parischnogaster nigricans*; von Schulthess, 1927, Suppl. Ent. 16:87.

Distribution: Malaysia: Peninsular Malaysia, Sarawak; Singapore\*; Indonesia: Sumatra\*, Bangka\*, Krakatau\*, Java\*, Kangean\*; Philippines: Luzon.

#### *nigricans serrei* (du Buysson)

*Ischnogaster serrei* du Buysson, 1905, Bull. Soc. Ent. France: 281, female, male—"Batavia" (Paris).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).—Dover, 1931, J. Fed. Malay St. Mus. 16:255 (syn. of *Stenogaster nigrifrons* (Smith)).

*Parischnogaster serrei*; von Schulthess, 1927, Suppl. Ent. 16:88 (cat.).

*Stenogaster serripes* [!]; von Schulthess, 1935, Rev. Suisse Zool. 42:299.

Distribution: Indonesia: Java

#### *striatula* (du Buysson)

*Ischnogaster striatulus* du Buysson, 1905, Bull. Soc. Ent. France: 282, female—"Sumatra" (Paris).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).

? *Ischnogaster clypealis* Cameron, 1906, J. Straits Branch R. Asiat. Soc. 46:122, female—"Bidi . . . Kuching" (London).

*Ischnogaster foveatus* du Buysson, 1907, Notes Leyden Mus. 29:80, male—"Salawatti" (Leiden).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):255 (in subgenus *Parischnogaster*).

? *Ischnogaster levifoveatus* Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:462, male (in subgenus *Parischnogaster*)—"BORNEO: Sarawak, Mt. Matang" (London).

? *Parischnogaster costulatus* von Schulthess, 1927, Suppl. Ent. 16:82, female—"Sumatra, Lubuk Sulasih, 1,000 m" (Wien).

*Parischnogaster striatulus*; von Schulthess, 1927, Suppl. Ent. 16:82 (syn.: *foveatus* du Buysson).

*Parischnogaster striatulo* [!]; von Schulthess, 1927, Suppl. Ent. 16:82.

*Parischnogaster striolatus* [!]; von Schulthess, 1927, Suppl. Ent. 16:83.

*Parischnogaster foveatus*; von Schulthess, 1927, Suppl. Ent. 16:87, 88 (syn.: *Parischnogaster striatulus* (du Buysson)).

*Parischnogaster ? levifoveatus*; von Schulthess, 1927, Suppl. Ent. 16:87.

Distribution: Thailand; Malaysia: Peninsular Malaysia\*, Sarawak; Indonesia: Sumatra, Kalimantan, Salawati, Java\*.

#### *timida* (Williams)

? *Ischnogaster strandi* du Buysson, 1910, Bull. Soc. Ent. France: 39, male, female—"Philippines: Samar" (Berlin).

*Parischnogaster strandi*; von Schulthess, 1927, Suppl. Ent. 16:88.

*Stenogaster timidus* Williams, 1928, Bull. Hawaii. Sugar Pltrs. Assoc. Exp. Stat. (Ent. Ser.) 19:170, pl. XXXIII Fig. 228, female—"Molawin Falls, Mt. Makiling, Los Baños" (Honolulu).

*Parischnogaster timida*; Carpenter, 1988, J. New York Ent. Soc. 96:175.

Distribution: Philippines: Samar, Luzon.

#### *unicuspata* Reyes

*Parischnogaster unicuspata* Reyes, 1988, Philipp. Ent. 7(4):387, 400 (key), figs. 1, 69-75, 82, 85, 91-92, 109, female, male—"Palawan National Agricultural College, Aborlan, Palawan" (holotype male Los Banos); also from other localities in Palawan and Malaysia.

Distribution: Thailand\*; Malaysia: Peninsular Malaysia, Sarawak; Singapore\*; Indonesia\*: Sumatra, Bangka; Philippines: Palawan.

### Genus *Stenogaster* Guérin-Méneville

*Stenogaster* Guérin-Méneville, 1831, in Duperrey, Voyage Coquille, Zool., Ins., Atlas: pl. 9 fig. 9, genus.

Type species: *Stenogaster fulvipennis* Guérin-Méneville, 1831, by monotypy.

*Ischnogaster* Guérin-Méneville, 1838, in Duperrey, Voyage Coquille, Zool., Ins., Texte 2(1):268. Unnecessary replacement name for *Stenogaster* Guérin-Méneville, 1831, thought to be preoccupied by *Stenogaster* Solier, 1835 (Coleoptera).

#### *adusta* van der Vecht

*Stenogaster adusta* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 287 (key), 291, figs. 21-33, female, male—"Misool . . . Fakal" (holotype female Leiden).

Distribution: Indonesia: Misool, Irian Jaya.

#### *canaliculata* (Cameron)

*Ischnogaster canaliculatus* Cameron, 1911, Nova Guinea 9(2), Zool.: 190, female—"Bivak Island" (lectotype Amsterdam).—Meade-Waldo, 1914, Ann. Mag. Nat. Hist. (8)14:405 (syn. of *Ischnogaster fulvipennis* [!] Guérin-Méneville).—van der Vecht, 1975, J. Aust. Ent. Soc. 14:299, 301 (designation of lectotype).

*Stenogaster* ? *canaliculatus*; von Schulthess, 1927, Suppl. Ent. 16:85.

*Stenogaster canaliculata*; van der Vecht, 1975, J. Aust. Ent. Soc. 14:298 (key), 299.

Distribution: Indonesia: Irian Jaya.

*concinna* van der Vecht

*Stenogaster concinna* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 285, 286 (key), 295, figs. 1a-b, 53-80, male, female—"S.W. New Guinea . . . Wataikwa River" (holotype male London); also from other localities in New Guinea.

Distribution: Indonesia: Irian Jaya; Papua New Guinea.

*decorata* van der Vecht

*Stenogaster decorata* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 287 (key), 293, figs. 34-51, female, male—"Misool . . . Fakal" (holotype female Leiden).

Distribution: Indonesia: Misool, Yapen.

*flavifrons* van der Vecht

*Stenogaster flavifrons* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 298 (key), 303, figs. 94-103, female, male—"N.W. New Guinea . . . Japen, Mt. Baduri, 300 m" (London).

Distribution: Indonesia: Yapen.

*fulgipennis* (Guérin-Méneville)

*Stenogaster fulgipennis* Guérin-Méneville, 1831, in Duperrey, Voyage Coquille, Zool., Ins., Atlas: pl. 9 fig. 9, sex and locality not stated (holotype male from "Dory, N. Guinea," Genova).—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37(3):254 (in subgenus *Ischnogaster*).—Dover and Rao, 1922, J. Asiat. Soc. Beng. (N. S.) 18:236, footnote (correct generic name).—Bequaert, 1926, Ent. Mitt. 15:192 (generic name).—Guiglia, 1948, Ann. Mus. Civ. Stor. Nat. Giacomo Doria 63:178 (location of type).

*Ischnogaster fulgipennis*; Guérin-Méneville, 1938, in Duperrey, Voyage Coquille, Zool., Ins., Texte 2(1):269, "female" from "Dory, dans la Nouvelle-Guinée" [the description is evidently based on a male].—de Saussure, 1852, Ann. Soc. Ent. France (2)10:23 "fem. ou ouvrière" [redescription of Guérin-Méneville's type]; 1853, Ét. Fam. Vespa. 2:7 ("female").—von Schulthess, 1914, Zool. Jahrb. (Abt. Syst. Geogr. Biol. Tiere) 37:254 (type of subgenus *Ischnogaster*).

*Stenogaster fulgidipennis*; von Dalla Torre, 1894, Cat. Hym. 9:113, invalid emendation.

*Ischnogaster fulvipennis* [!]; Meade-Waldo, 1914, Ann. Mag. Nat. Hist (8)14:405 (syn.: *Ischnogaster canaliculatus* Cameron).

Distribution: Indonesia: Irian Jaya.

*glabra* van der Vecht

*Stenogaster glabra* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 299 (key), 303, figs. 104-110, male—"N.W. Guinea . . . Cyclops Mts., 1,100 m" (London).

Distribution: Indonesia: Irian Jaya.

*licina* van der Vecht

*Stenogaster licina* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 287 (key), 295, fig. 52, female—"N.W. Guinea . . . Road Ajamaru-Teminabuan, km 1-8" (Leiden).

Distribution: Indonesia: Irian Jaya.

*macilenta* van der Vecht

*Stenogaster macilenta* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 298 (key), 306, figs. 1c-e, 117-131, female, male—"N.W. New Guinea . . . Lower Mist Camp, 1550 m" (holotype female Leiden); also from other localities in Irian Jaya.

Distribution: Indonesia: Irian Jaya.

*pilosa* van der Vecht

*Stenogaster pilosa* van der Vecht, 1975, J. Aust. Ent. Soc. 14:283, 299 (key), 305, figs. 111-116, male—"N.W. New Guinea . . . Cyclops Mts, Mt. Lina, 1,100-1,400 m" (London).

Distribution: Indonesia: Irian Jaya.

*unicolor* (Smith)

*Ischnogaster unicolor* Smith, 1864, J. Proc. Linn. Soc., Zool. 7:41, male—"Mysol; Waigiou" (lectotype Oxford).

*Stenogaster unicolor*; von Schulthess, 1927, Suppl. Ent. 16:86.

Distribution: Indonesia: Waigeo, Misool.

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